

Name:

Date:

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PART A In the space on the left, write the letter of the term or phrase which **best** completes the statement or answers the question (1 mark each).

- _____ 1. Which of the following is the term given to the scale on which each unit represents a ten-fold change in the hydrogen ion concentration?
- a. Indicator
 - b. Acid
 - c. pH
 - d. Neutralization
- _____ 2. The chemical name for H_2SO_4 is ...
- a. Sulphate acid.
 - b. Hydrosulphur acid.
 - c. Sulphurous acid.
 - d. Sulphuric acid.
- _____ 3. Bases generally taste _____ and feel _____.
- a. Salty; slippery
 - b. Bitter; slippery
 - c. Sour; rough
 - d. Spicy; rough
- _____ 4. Acids release ...
- a. Water molecules
 - b. Salt ions
 - c. OH^- ions
 - d. H^+ ions
- _____ 5. At pH 10 indicator phenolphthalein is _____ and indigo carmine is _____.
- a. Colourless; blue
 - b. Pink; yellow
 - c. Colourless; yellow
 - d. Pink; blue
- _____ 6. Stomach acid has a pH of ...
- a. 1
 - b. 2
 - c. 7
 - d. 11

- ___ 7. Which of the following is most likely to cause blue litmus paper to turn red?
- Lemon juice
 - Oven cleaner
 - Soap
 - Table salt
- ___ 8. Which of the following is an organic compound?
- CaCO_3
 - KBr
 - CH_4
 - CO_2
- ___ 9. An alcohol is a type of organic compound that contains ...
- Carbon and hydrogen.
 - Carbon, hydrogen, and oxygen.
 - Hydrogen and oxygen.
 - Carbon, hydrogen, and nitrogen.
- ___ 10. Lewis diagrams show an atom's ...
- Protons
 - Valence electrons
 - Inner shell electrons
 - Neutrons

PART B In the space provided mark each of the following as true or false. (1 mark each)

- ___ 1. Acids have a pH above seven.
- ___ 2. Bases turn blue litmus paper red.
- ___ 3. Plants produce organic compounds such as carbohydrates and sugars.
- ___ 4. A solution with a high concentration of hydrogen ions will have a low pH.
- ___ 5. Skeleton equations are unbalanced equations.
- ___ 6. Metal oxides form acidic compounds when dissolved in water.
- ___ 7. Ordinary table salt has the chemical formula NaBr.
- ___ 8. Silicon carbide is an organic compound.
- ___ 9. $\text{K}_2\text{HC}_6\text{H}_5\text{O}_7$ is an inorganic compound.
- ___ 10. An estimated 250 000 new organic compounds are made each year.

PART C In the space provided, match each term or phrase with the best definition. (1 mark each)

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|--------------------------|---|
| ___ 1. Organic chemistry | A. Chemical compounds containing hydroxide ions. |
| ___ 2. pH indicator | B. Organic compounds are made by plants. |
| ___ 3. Acids | C. An organic compound containing carbon and hydrogen. |
| ___ 4. Alcohols | D. Release ions that are not H^+ or OH^- . |
| ___ 5. Hydrocarbons | E. The process of adding calcium carbonate to lakes to neutralize acid. |
| ___ 6. Litmus paper | F. The study of compounds that contain carbon. |
| ___ 7. Bases | G. Chemicals that change colour depending on the pH of the solution. |
| ___ 8. Lewis diagrams | H. Contain carbon, hydrogen, and oxygen. |
| ___ 9. Salts | I. An acid/base indicator that does not change color at pH 7. |
| ___ 10. Carbohydrates | J. Release H^+ ions. |

PART D Each of the following questions requires a short answer.

1. Describe how you can use red and or blue litmus paper to determine if a solution is acidic. (1 mark)

2. Describe how you can use red and or blue litmus paper to determine if a solution is basic. (1 mark)

3. Describe how you can use red and or blue litmus paper to determine if a solution is neutral. (1 mark)

4. For each of the following compounds, state what its formula name can be changed to when it is present in an aqueous solution. (1 mark each)
- a. HBr
 - b. H_2SO_4
 - c. hydrogen chloride
 - d. hydrogen carbonate
5. Draw a Lewis diagram for each of the following. (1 mark each)
- a. Bromine
 - b. Sodium
 - c. Carbon
 - d. Oxygen

6. Draw a Lewis diagram for each of the following. (2 marks each)
- a. Sodium chloride

 - b. NH_3 (ammonium)
7. List two pH indicators you could use to determine if a solution has a pH of 6.0. Then, explain how you'd use the two indicators to confirm the solution does in fact have a pH of 6.0. Be sure to include the colour of each indicator. (3 marks)
8. Explain why carbon forms so many compounds. (2 marks)